Preparing for a Rapid Response to Major Marine Oil Spills: Protecting and Assessing the Health and Well-Being of Communities: Proceedings of a Workshop in Brief

DETAILS

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October 2017

Preparing for a Rapid Response to Major Marine Oil Spills: Protecting and Assessing the Health and Well-Being of Communities

Proceedings of a Workshop—in Brief

On August 2–3, 2017, the National Academies of Sciences, Engineering, and Medicine (the National Academies) held a standalone workshop titled Preparing for a Rapid Response to Major Offshore Oil Spills: A Workshop on Research Needs to Protect the Health and Well-Being of Communities. Its objectives were to explore research needs and other opportunities for improving public health preparedness, response, and protection related to oil spills; consider how to work within and how to complement the existing oil spill response framework to improve the protection of community health and well-being; to inform discussions about how the Gulf Research Program (GRP) and other divisions of the National Academies can support these efforts; and to foster connections among public health, oil spill practitioners, disaster research communities, and leaders from communities affected by oil spills. At this workshop, both speakers and participants came together to represent these stakeholder communities.[1]

Ann Hayward Walker, Scientific and Environmental Associates, framed the discussion by noting that oil spill regulations focus on limiting damage to the environment and protecting people from immediate threats to health and safety; a focus that overlooks broader and longer-term impacts, including physical, mental, economic, and social aspects of health and well-being. Bringing together community leaders, oil spill and public health practitioners, and disaster researchers, she said, is essential to consider how best to "collaborate to improve our collective abilities to better protect community health and well-being during future oil spills."

OIL SPILL RESPONSE FRAMEWORK

Roger Laferriere, National Institutes of Health (NIH), explained that two federal laws guide oil spill response: the Oil Pollution Act of 1990 (OPA90) and the Robert T. Stafford Act of 1988. OPA90, he observed, affected revisions to the National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan or NCP), the principle federal regulation first developed in 1968, that describes the national response capability, promotes coordination among the hierarchy of responders and contingency plans, and directs the U.S. Coast Guard (USCG) in coastal areas and the U.S. Environmental Protection Agency (EPA) in inland areas to plan and coordinate preparedness and response activities. Laferriere noted that within the NCP, there is an obligation to safeguard the public and responders from health effects, but "what we are really talking about is toxicology and physical health impacts of spill exposures,

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[1] In an effort to summarize the workshop, comments are organized by topic and not necessarily in the order they were presented at the workshop. To see the workshop agenda and speakers' presentations, please refer to the workshop's meeting page at http://www.nationalacademies.org/hmd/Activities/PublicHealth/Preparing-for-Rapid-Response-to-Major-Offshore-Oil-and-Gas-Spills/2017-AUG-2.aspx (accessed October 12, 2017).

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not necessarily the psychosocial issues." Yvonne Addassi, Department of Fish and Wildlife's Office of Spill Prevention and Response, noted that regional and area contingency plans are also developed but response is a "top down" mobilization.

Rear Admiral Peter Gautier, USCG, said that the incident command system (ICS) provides a top-down, structured, and established process for bringing the response management together under unified command. Responsible parties or "spillers" are included within the unified command and pay for all cleanup, restoration, natural resource damage assessment, and economic and third-party claims, said Addassi. Laferriere noted that the ICS lacks a community health component, but this could be included for future spills.

The Stafford Act, said Laferriere, established the National Response Framework (NRF) and National Disaster Recovery Framework (NDRF) to provide federal assistance to state and local governments working to alleviate suffering and damage caused by national emergencies and disasters. Laferriere explained that the NCP can operate within the NRF or the NDRF, but often operates in isolation; thus, community health aspects of these frameworks are not always brought to bear during oil spills.

Several speakers noted differences between oil spill and disaster responses. Addassi observed that many spill responders do not consider oil spills a disaster; but to her, the term implies a large human health emergency. David Abramson, New York University, explained that from a public health[2] perspective, disasters are events that disrupt the functioning of a community and cause human, material, economic, and/or environmental losses that exceed the community's ability to cope using its own resources. He continued that the objectives of disaster response are to protect and preserve life and property, to impose order on chaos, and to facilitate recovery of physical, psychosocial, economic, social, and cultural aspects of health and well-being. In contrast to the federally driven response to spills, disaster emergency response begins at the local level with first responders and is mirrored in the state and federal response teams, Abramson explained. Blame is also clearly assigned to a responsible party during oil spills, he added.

IMPACTS OF OIL SPILLS ON COMMUNITY HEALTH AND WELL-BEING

Several speakers highlighted the interconnected effects of spills on individuals, families, networks, communities, and entire regions. Abramson observed that in contrast to natural disasters, which typically damage physical infrastructure, oil spills threaten complex ecosystems that support regional economies and ways of life. Ecosystems take a long time to recover, he said, with damage lingering long after spill responders are gone. Liesel Ritchie, Natural Hazards Center at the University of Colorado Boulder, commented that in both the *Exxon Valdez* (*EVOS*) and *Deepwater Horizon* (*DWH*) spills, the strongest predictors of stress were concerns about family health and economic future, economic loss, and individual or group connections to threatened renewable resources. Issues related to oil exposure and compensation processes are strong predictors of long-term stress, Ritchie observed.

Keith Nicholls, University of South Alabama, illustrated how oil spill stressors are linked to an array of economic, psychological, sociological, and physical impacts. When a person loses his or her job due to an oil spill, he said, impacts can extend beyond income loss to affect health through cascading effects (e.g., fear, sense of loss, stress, anxiety, depression, high blood pressure). Sharon Croisant, The University of Texas at Galveston, noted that disasters disproportionately affect vulnerable groups that lack access to health care and other resources; and that mental health impacts often manifest over the long term. Abramson described his work on long-term effects on children and youth, which demonstrated that disasters constrain how youth think about their long-term prospects. Ritchie said that spill impacts go beyond the individual to damage communities by disrupting interpersonal and group relationships, generating pervasive uncertainty about contamination and exposure, fueling distrust, threatening economic or cultural connections to renewable resources, and necessitating involvement in compensation processes.

PREPARING FOR THE NEXT SPILL

John Tarpley, National Oceanic and Atmospheric Administration's (NOAA's) Office of Response and Restoration, discussed the scientific support coordinator program of 16 people who develop contingency plans, run exercises and trainings, and respond to an average of 150 spills per year, although most do not receive national attention.[3] Over the past 30 years, response incorporated new aspects, he said, and it is time to expand the focus from the health and safety of workers and

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[2] Sharon Croisant, The University of Texas at Galveston, described several roles of public health during disasters: identifying community resources applicable to physical, social, and psychosocial effects; identifying populations at risk; recommending ways to limit injury; and ensuring health issues are addressed.

[3] Addassi said that spill preparedness and response activities are based on the size of release (from smallest to largest: type 4, 3, 2, 1, and Spills of National Significance). She noted this typology can misrepresent the potential impact. For example, a spill can be relatively small but contaminate a local source of drinking water.

responders to broader impacts on the public. The national response system is flexible and adaptable and can expand and contract to meet needs, he said.

Many participants emphasized the importance of preparedness before oil spill events. Tarpley stressed the need to have the science and procedures in place before a response. He challenged participants to "develop strategies that would enable response leadership to tell the response community that this is a priority, and to develop champions for this work in public health and disaster research." Duane Gill, Oklahoma State University, added that engaging communities before an oil spill is important so that "when an event occurs we are in the community, we know what is going on in the community, and we are prepared to ameliorate the negative impacts of an event."

POTENTIAL CHALLENGES

The wide-ranging workshop discussion characterized four groups of challenges to incorporating the protection of community health and well-being into oil spill response.

Complex and Long-Term Impacts

Oil spill responders "come in and try to solve what [they] have to solve, but once [they] are done, [they] leave," said Thomas Dardar, Jr., principal chief of the United Houma Nation. He said when responders leave, communities are left behind to pick up the pieces, to make sense of them, and continue their daily lives. Gill explained that when a community's social, cultural, and economic existence is centered on renewable resources, spills that affect those resources have huge and lasting impacts. Thao Vu, Mississippi Coalition for Vietnamese-American Fisher Folks and Families, added that the Gulf Coast has a rich tradition of fishing communities dependent on a healthy environment and oil spills threaten multigenerational livelihoods, ways of life, and traditions. A statement from the Makah Tribal Council read by Elise DeCola, Nuka Research and Planning Group, noted the tribe's cultural connections to the environment, warning: "loss to traditional use cannot be replaced or supplanted."

The impacts of large disasters, including the *DWH* spill, are complex, noted Abramson, and produced by social dynamics that amplify vulnerabilities and inequalities that weaken a community's social and economic assets, relationships, and institutions. Nicholls noted that preexisting conditions, such as poverty, unemployment, and declining social capital, make communities less resilient to disasters. Bishop James Black, Center for Environmental & Economic Justice, said that resources for both recovery and resilience are not reaching the most vulnerable communities: "people who are underserved always get the short end of the stick ... what needs to be changed is very institutional. The fat cats get the dollars that we need to be putting in the poor communities for our preparation and resiliency."

Communicating and Engaging at a Local Level

During response, communities are often perceived by those with power and authority as part of the problem rather than part of the solution, said Abramson. Ed Levine, NOAA, said that outside agitation from lawyers and others also contributes to distrust and misinformation.

Many participants identified other challenges to effectively communicating and engaging communities, including language, literacy, and the limited reach of communications. Dardar said responders' messaging is often full of jargon and not appropriately translated for communities and Linda Birnbaum, National Institute of Environmental Health Sciences (NIEHS), observed that effectively communicating about risk can be difficult because of low levels of environmental health and health literacy among the general public. Vu raised the example of shrimp harvests seized during the *DWH* spill, because the shrimpers did not get emailed messages about fishing area closures. The lack of clear communication about roles and resources of various agencies can also limit the access of communities to disaster recovery resources, she said. Non-technical materials were needed, she said, that describe an agency's role, regional or local offices, and where to go for more information; these materials should also be translated into the appropriate languages.

Emily Menashes, NOAA's Office of Sustainable Fisheries, and several other participants focused on shortfalls in communications about seafood safety. Robert Dickey, The University of Texas at Austin Marine Science Institute, said that the critical information gaps hampered the U.S. Food and Drug Administration's communications. Community-level information about demographics, baseline health, risks, and vulnerabilities are needed, he said, to help tailor communications to local audiences. Julie Falgout, Louisiana Sea Grant Extension, warned that even brief delays in dissemination of accurate information allow misinformation to fill the void.

Gaps in Knowledge for Prevention and Mitigation Strategies

Nicole Lurie, former Assistant Secretary for Preparedness and Response (ASPR), noted that after 40 major oil spills, critical information gaps persist about how to prevent and mitigate physical, mental, and behavioral health impacts. Lurie noted that it can be difficult to fund research between events. Walker added that funding for research during response is excluded under OPA90.

Abramson and others noted that programs and services provided during response are often not evaluated and assessing recovery is limited by a lack of outcome metrics. Lawrence Palinkas, University of Southern California, noted that widely used practices (e.g., psychological first aid) are not yet supported by evidence for improved outcomes or cost-effectiveness.

Several participants highlighted the need for baseline data, which can both inform preparedness planning and help track impacts of an event. Dickey cited the need for more "environmental intelligence" data about coastal water contaminant burden, low-level chronic exposures, and background levels of oil constituents. Dale Sandler, principal investigator for NIEHS's Gulf Long-Term Follow-Up Study,[4] explained that data about a person's health before a spill are crucial for understanding any changes in health caused by the spill; Dickey and Vu underscored the lack of key information (e.g., demographics, livelihoods, ways of life, and cultural practices) about populations most likely to be affected by spills.

Dardar said that people often feel "talked down to" by responders and experts and are dismayed by their reluctance to recognize (pending more scientific evidence) long-term community impacts of oil spills. A number of participants noted that dispersant use illustrates the dynamic tension between community health and environmental concerns, because, as Walker noted, they are viable response tools but community health concerns have not been successfully addressed. This can lead to community members disengaging and becoming distrustful of response efforts.

Competing Priorities and Sustainability

Several participants articulated different priorities and experiences that shape stakeholder perspectives. Jonathan Waldron, Blank Rome, LLP, and Captain Joseph Loring, USCG Office of Marine Environmental Response Policy, summarized needs and mandates as responders and responsible parties focus on immediate safety; communities focus on local concerns and ensuring their needs are understood; and public health has a broad focus on safety, hazard detection, food source safety, and mental health effects. Walker argued that broad-spectrum community health and well-being should be more central to response. Kelly Wilson, Anadarko Petroleum, recognized that the oil industry's focus on direct impacts of hazards is akin to treating the symptoms but not the drivers of long-term impacts on communities.

To align perspectives, many participants suggested broadening who is involved in preparedness and planning. Community representation is a critical missing piece, Dickey said, but he also noted that it can be difficult to engage the public between disasters. Loring said that many stakeholders—from federal on-scene coordinators and the oil industry to local government and community representatives—should be involved in area contingency plan (ACP) initiatives, but there is often poor attendance at area committee meetings. Monica Rusk, USCG, observed that elected and appointed officials are not often involved in planning efforts. Wilson said it can be challenging to maintain industry and potential responsible party involvement in preparation and planning between events, even though, as Greg DeMarco from ExxonMobil said, operators need well-practiced contingency plans with executable components that can be translated into response capabilities.

Walker noted that spill response is a collateral or a non-primary duty for many practitioners, which presents barriers of time and availability. Funding is needed to bring public health and other stakeholders to area planning committees, said Gary Pearson, New Jersey Department of Environmental Protection. Walker pointed to the lack of regulatory policy to drive attention to longer-term community health and well-being issues, but observed that legislative change was unlikely because it would need to be voluntarily adopted by the federal leaders in oil spill preparedness and response (i.e., EPA and USCG). Tony Knap, Texas A&M University, noted that for the *EVOS* and *DWH* spills, the responsible parties were able to pay for response and recovery. Knap asked participants to consider what would happen in incidents in which this is not the case and to develop approaches and programs that can happen without a responsible party.

Scott Lundgren, NOAA's Emergency Response Division, noted the infrequency of major oil spill events. He said the major spills most often cited in these discussions (*EVOS*, *DWH*) were two decades apart, and even the smaller noteworthy events (e.g., *Cosco Busan*) that raised issues of community health were relatively infrequent. He and several other participants pointed to the need to find ways that will sustain efforts to improve preparedness and response by looking at local effects of smaller spills and tapping into community resilience initiatives or networks that may also be employed to improve oil spill response.

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[4] For more information, see https://gulfstudy.nih.gov/en/index.html (accessed October 6, 2017).

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POTENTIAL OPPORTUNITIES

Several participants acknowledged culture change would be necessary on many levels to broaden the scope of oil spill response. Suggestions for opportunities can be grouped into four categories.

Aligning Existing Policies, Funding, and Systems

To affect culture change, Laferriere called for national recognition that oil spills are community health incidents. He suggested strengthening the underutilized Public Health Services Act for declaring a public health emergency after a spill. He added that activating the NRF and the NDRF during an oil spill would allow the U.S. Department of Health and Human Services to declare a public health emergency and tap into resources for recovery.

Several participants noted other opportunities within the current policy structure. For example, Gautier proposed addressing the capacity limitations in the NCP and the ICS systems, through on-the-ground innovating and adapting to meet practical needs beyond the organizational chart. Addassi noted that while spill response has generally prioritized standards of protection like air and water quality, the liaison officer in the ICS structure is starting to address standards related to resiliency and mental health. The most recent USCG Incident Management Handbook, Tarpley noted, includes an Assistant Safety Officer for Public Health and suggests the next steps of collaborating with public health experts are to establish protocols and engage "public health champions" to encourage prioritization of public health in spill response at the national level. Participants also discussed strategies to encourage culture change in planning and response. Walker suggested explicitly including the protection of community health and well-being in response priorities and integrating relevant community health and well-being values in preparedness and mitigation efforts. Laferriere suggested prioritizing community health and well-being in EPA and USCG regional response plans, and including an ICS objective on community health and well-being in every ACP. Rusk suggested developing operational guidance for accessing other response frameworks' Emergency Support Functions (ESFs) relevant to community health. DeMarco suggested using net benefit analysis to evaluate all available response options and pre-authorizing response tools, such as dispersants, to streamline decision making related to community health and well-being.

Frameworks and models for incorporating community health and well-being into response exist for other hazards (e.g., infectious disease outbreaks, severe weather, and nuclear emergencies), said Lurie. She and others suggested these could serve as useful starting models for spill response. ASPR's Technical Assistance Center[5] could help facilitate reciprocal communication during smaller events and improve oil spill response science, said Lurie, who also suggested the use of public health's Team B concept.[6] Walker added that adapting the U.S. Department of Homeland Security's use of science and technology advisory groups (which include public health) could help institutionalize resources and link them to incident command during a response.

Some participants suggested a focus on local and state public health capacity for responding to oil spills. Hugh Mainzer, U.S. Centers for Disease Control and Prevention, said public health practitioners could benefit from training in core emergency management practices in both planning and response, and Laferriere suggested that the public health sector could become more familiar with the ICS and oil spill related needs. Alignment with social justice, community health, and disaster recovery and resilience efforts was an opportunity underscored by many workshop participants to improve and sustain preparedness efforts between major spills.

Improving Communications and Building Trust

Walker said preparedness efforts should leverage existing social capital structures and use honest brokers to build lines of direct, open, reciprocal communication through trusted messengers, community networks, and public health agencies and associations. A number of such structures were mentioned by participants. For example, Paul Rainwater, Cornerstone Government Affairs, suggested locating preparedness efforts in venues deeply rooted in the community, such as churches. The importance of trusted messengers was reiterated by Nicholls, who suggested utilizing community health workers. Falgout suggested working with Sea Grant, which is staffed by community-based extension agents who work with communities to identify needs, facilitate research, and simplify scientific messaging. The USCG is staffed by community members who have social ties that can help identify and develop relationships before a spill, noted Gautier. He suggested identifying community leaders from past spill responses of any size and leveraging planning and exercising for other environmentally related incidents and mission sets (e.g., search and rescue, clearing canals of ships before hurricanes) to develop community relationships that might be valuable during an oil spill. DeCola suggested looking at how Alaska's

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[5] For more information, see https://asprtracie.hhs.gov/assistance-center (accessed August 28, 2017).
[6] For more information, see http://www.cidrap.umn.edu/news-perspective/2015/10/ebola-team-b-model-could-serve-more-broadly-its-members-say (accessed August 28, 2017).

Regional Citizens' Advisory Councils (RCAC)[7] have been able to supplement local government emergency management functions, because they are involved in local outreach.

Walker observed that community associations and nongovernmental organization (NGO) networks could help to disseminate information and address community concerns in real time during a response. Structured opportunities for feedback could be used to monitor community perceptions of response (e.g., risks, questions, and concerns) and adjust practices accordingly, suggested Eric Baumgartner, formerly of the Louisiana Public Health Institute. Community-based research collaborations are useful, and Vu described her organization's work to build trust and foster engagement by having fishermen collect data that are validated by the academic community.

Mark Bonn, Florida State University, said messaging should provide accurate, trustworthy information that is compatible across sectors and systems and Vu discussed the need for messaging and materials that are packaged appropriately for communities' languages, cultural sensitivities, education levels, and practical concerns. Katherine Kirkland, Association of Occupational and Environmental Clinics, illustrated the need to integrate local, practical knowledge into federal guidance to communities by describing a fact sheet developed during the *DWH* spill that advised keeping children away from tar balls on the beach. This was not realistic, she noted, so guidance was added that provided practical advice, including the best ways to remove oil safely should children come into contact with tar balls. NGOs and other local organizations are often best at providing appropriate information in a timely manner, she said.

Including Communities in Planning and Response Efforts

Walker said the response sector should reframe community engagement so it becomes part of planning and response efforts. She said outreach through area planning committees can acknowledge and accommodate for underlying power imbalances. Both Vu and Ritchie noted that local expertise and traditional ecological knowledge could provide valuable input for preparedness and planning, including ACPs. Melissa Finucane, RAND, suggested involving communities in the conceptualization of the discussion agenda and development of plans. Vu suggested addressing power imbalances by giving communities more time to contribute (e.g., extending government document comment periods to more than 30 days).

Local knowledge and community engagement are equally valuable in response and many participants suggested that knowledge of community concerns and values could inform operational decisions. Dardar stated, "trust us, believe in us, and have the confidence that we're not going to steer you wrong." Nancy Kinner, University of New Hampshire, suggested having a roster of local community experts available to consult during response. Communities have hierarchies of needs (e.g., access to safe air, water, and food; housing; health care; employment; education) that must be understood and addressed in response efforts for them to feel secure, said Mainzer. Baumgartner suggested assigning local community health or resilience officers to preparedness efforts to map community systems and resources, inform response, and engender community confidence.

Many participants noted that efforts to engage communities have begun. Gautier noted that USCG's post-*DWH* research found the ACP in New Orleans to be out of date and incomplete; it has since been rewritten with community involvement and buy-in, with all parish presidents signing off. Pre-response efforts are critical, said Loring, and the ACP Revitalization Initiative is engaging with area planning committees to update ACPs. Gautier said engagement of community representatives in these committees could also be useful for developing pre-prepared volunteer plans and running community exercises. Gautier also suggested pre-vetting fishing boats to include in vessels of opportunity programs.

Improved Understanding of Oil Spill Science, Impacts, and Mitigation Strategies

Bernard Goldstein, University of Pittsburgh, noted that risk assessment decisions during an emergency must be made very quickly without time for consensus; thus, laying a foundation of good science is needed. Some participants suggested building consensus on standard measures, thresholds for risk and exposure, and on language and terminology. Walker suggested defining clear thresholds for when a spill becomes a disaster. Abramson stated the need for an established endpoint for oil spill response because a clean shoreline does not equal recovery for communities.

Sandler emphasized that research also needs to be part of response. Miller suggested collaborating across sectors to collect needed data and to identify platforms for the development of protocols, tools, and methodologies related to human health and resiliency. Ready-to-go protocols, pre-approved by institutional review boards, human-subject committees, and the U.S. Office of Management and Budget, were suggested by Lurie. Birnbaum noted that the NIH's Disaster Research Response Program meets many of these needs and includes hundreds of protocols that could be integrated into response plans. Abramson suggested using public health tools (e.g., CDC's Community Assessment for Public Health Emergency Response) for surveillance and needs assessment during response and recovery.

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[7] For more information, see http://www.pwsrcac.org (accessed August 28, 2017).

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Ritchie emphasized that what is known about oil spills is grounded in a large and longstanding body of research on societal dimensions of hazards and disasters and she cautioned that research should build on what we know and focus on specific, unanswered questions. She also noted that communities experiencing cumulative effects of multiple disasters (e.g., Hurricane Katrina and the *DWH* spill) are experiencing research fatigue that diminishes research quality and response rates.

Participants also discussed information that could help prioritize response actions. Maureen Lichtveld, Tulane University School of Public Health and Tropical Medicine, suggested using assessments of community-specific resources, needs, and vulnerabilities collected during inter-disaster periods. Alice Pennaz, U.S. Geological Survey, pointed out that a community's history feeds into definitions of well-being, health, and socioeconomic status, so it is important to understand and work within these contexts. Palinkas suggested collecting data on local mental health response capacity (e.g., number of service providers, level of training, and availability of social workers, clinical psychologists, and primary care physicians) and building local capacity to deliver services. Collecting data about local seafood consumption patterns (given that seasonal and total consumption can vary significantly) could improve seafood safety risk assessments and communications, noted Dickey.

Miller suggested using smaller spills to focus on collecting human impact data and leveraging acute response activities across agencies to collect more exposure data. The Interagency Coordinating Committee on Oil Pollution Research's (ICCOPR's) research and technology plan can inform the research agenda across sectors, said Kirsten Trego, ICCOPR. Kinner noted that data from *DWH* studies represent a body of human data that have not been thoroughly analyzed. She also suggested thinking about how a human response damage assessment might be conducted (in addition to the natural resource damage assessment routinely conducted after oil spills).

Ritchie and other participants noted the need to analyze how specific mitigation, preparedness, response, and compensation processes affect community resilience and long-term recovery prospects. Outcome data are often lacking, noted Palinkas, and are needed to evaluate service delivery and modify practices. Abramson said short-term needs assessment and surveillance data should be used as part of a long-term evaluation of community recovery.

OPPORTUNITIES FOR THE NATIONAL ACADEMIES

Participants discussed ways the National Academies' Health and Medicine Division and the GRP could contribute to integrating community health and well-being in preparedness, response, and recovery. Lurie said the National Academies' Standing Committee on Medical and Public Health Research During Large-Scale Emergency Events (the Standing Committee) could help by mobilizing the science and maximizing the use of shared definitions and measures to strengthen response and mitigation efforts. Lurie also suggested the Standing Committee could help to develop a code of ethical behavior and expectations for the research community. Abramson said the Standing Committee could prepare for a rapid response workshop to identify oil spill disaster–specific research needs within 3 weeks after activation. Kinner noted that it would be important to assess the level of disaster that triggers the responders and researchers to consider human impacts, because more frequent smaller spills also impact vulnerable communities.

Participant suggestions for the GRP included workshops and funding for research practice projects. As noted by Davin Holen, Alaska Sea Grant, it will be crucial for these activities to involve members of communities affected by oil spills. Ritchie suggested facilitated discussions with these communities. Many of these people are informally connected because of *DWH*, she said, and a facilitated discussion in which the responder community is available to listen to their perspectives could be powerful. Community workshops that integrate the discussion of spills with other disasters likely to occur in those regions could help participants understand how to align response approaches, noted Lurie. She also observed that in almost any disaster "the community has different kinds of questions they want answered. They are usually not the things on [the responder community's] list." A process for addressing community questions and concerns is essential, she said, and "if [the responders] have the information to answer those questions and concerns, [we need to] put it together and share it in a way that is effective. If not, [we need to] respect and honor those questions and do our best to respond."

Pearson suggested a workshop to facilitate information sharing among area planning committees. He said the day's discussion made it clear that they have not involved all the stakeholders needed and funding events that allow interactions with community health and disasters experts would be helpful. Abramson suggested that workshops in an affected area could also help align the research and response communities in addressing research objectives.

Several participants suggested the support of pilot projects with communities in Alaska, the Pacific Northwest, the Gulf region, and California to develop protocols and flesh out ACPs. Kinner noted that Alaska in particular is a "sleeping giant" with respect to future oil production. Baumgartner suggested carrying out drills with deliberate community health involvement and Gill suggested pilots patterned after RCAC to facilitate local stakeholder engagement.

FINAL REMARKS

The 2 days of discussion underscored the motivating premise for the meeting: that oil spills have potential health and public health consequences both for responders and affected communities (including mental and behavioral dimensions); yet, several workshop participants noted that neither the command structure nor the compensation structure account well for responding to these aspects of spills. Discussion also highlighted many opportunities to address this disconnect, including interest by many participants in developing a research agenda and the availability of existing tools and approaches for facilitating health and well-being research related to spills. Walker closed the workshop by thanking the participants and the National Academies for providing a space to come together and have a thoughtful exchange of ideas. She reiterated the idea that community health is a part of every disaster and that if both the short- and long-term concerns were included in oil spill preparedness, response, and recovery, many communities would be better prepared for and more resilient after an oil spill. Walker said that without legislation it will be difficult to address the concerns and issues discussed at the workshop, but not impossible. All stakeholders presented commonalities and motivations to change and that gave her hope. She emphasized the importance of establishing and maintaining connections among public health authorities, responders, researchers, and public advocates. She believes the National Academies can help to accomplish this goal and can work in collaboration with other stakeholders to make communities' health and well-being better protected in the future.♦♦♦

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